

ABSTRACT OF THE DISCLOSURE

A method and an apparatus are provided for measuring the thickness of a coating material using ultrasonic signals. A broad band of frequencies is transmitted by a transducer towards a layer of coating layer on a substrate and a trailing signal is received from the coating layer/substrate interface while a leading backscattered signal from a fluid/coating layer is gated out. The trailing signal is deconvolved into a set of frequencies. The resonant frequency of the coating layer is determined as the frequency with the greatest amplitude. The thickness of the material is calculated as a function of the resonant frequency of the coating layer.